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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/800,926 | 03/15/2004 | William E. Marshall | P01936US06 | 9570 |

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MCKEE, VOORHEES & SEASE, P.L.C.
801 GRAND AVENUE
SUITE 3200
DES MOINES, IA 50309-2721

| EXAMINER | |
|---|---|
| ZEMAN, ROBERT A | |
| ART UNIT | PAPER NUMBER |
| 1645 | |

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/800,926 | MARSHALL, WILLIAM E. | |
| | Examiner | Art Unit | |
| | Robert A. Zeman | 1645 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *7-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6* is/are rejected.

7)☒ Claim(s) *5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

The amendment and response filed on 7-13-2006 are acknowledged. Claim 5 has been amended. Claims 1-32 are pending. Claims 7-32 remain withdrawn from consideration as being drawn to non-elected inventions. Claims 1-6 are currently under examination.

### *Priority*

Applicant's request that the filing date of the instant application (3-15-2004) not be used for prior art purposes is acknowledged. As noted by Applicant the instant application is a continuation-in-part with the new disclosure being SEQ ID NO:1-3 and oligoribonucleotides with a molecular weight less than 10 kDa. Hence, any claim drawn to the newly disclosed material will not receive benefit of the priority dates afforded by the parent applications of the instant application. As all of the instant claims are drawn to the newly disclosed material the date of 3-15-2004 will be used for prior art purposes.

### *Claim Rejections Withdrawn*

The provisional rejection of claims 1-3 and 6 on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 19-21 of copending Application No. 11/284,517 is withdrawn in light of the Terminal Disclaimer filed on 7-13-2006.

The rejection of claim 5 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite by the use of the phrase "consisting of a base sequence selected from the group consisting of ..." is withdrawn in light of the amendment thereto.

***Claim Rejections Maintained***

***35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The rejection of claim 6 under 35 U.S.C. 112, second paragraph, as being rendered vague and indefinite the phrase "the ORN consists of signature sequences as defined in the definitions and only found in microbes as defined in the definitions" is maintained for reasons of record. It is still unclear what is meant by said term as the specification provides no listing of said "signature sequences". The same is true for any listing of sequences found only in microbes.

**Applicant argues:**

1. "Signature sequence" is specifically described in the specification as "oligoribosomal nucleotides that contain sequences found only in the ribosomes of specific orders, families, genera or species of microbes" and then further lists references that list such sequences in specific microbes.

Applicant's arguments have been fully considered and deemed non-persuasive.

The definition provided by the specification would not allow the skilled artisan to determine the metes and bounds of the claimed invention without the "cited" references. Hence, said references are deemed to constitute "essential matters". However, the MPEP states

> **608.01(p)**
> Newly filed applications obviously failing to disclose an invention with the clarity required
> are discussed in MPEP § 702.01.A disclosure in an application, to be complete, must contain such description and details as to enable any person skilled in the art or science to which the invention pertains to make and use the invention as of its filing date. *In re Glass,* 492 F.2d 1228, 181 USPQ 31(CCPA 1974).

An application as filed must be complete in itself in order to comply with 35 U.S.C. 112. Material nevertheless may be incorporated by reference, *Ex parte Schwarze*, 151 USPQ 426 (Bd. App. 1966). An application for a patent when filed may incorporate "essential material" by reference to (1) a U.S. patent, (2) a U.S. patent application publication, or (3) a pending U.S. application, subject to the conditions set forth below. "Essential material" is defined as that which is necessary to (1) describe the claimed invention, (2) provide an enabling disclosure of the claimed invention, or (3) describe the best mode (35 U.S.C. 112). In any application which is to issue as a U.S. patent, essential material **may not be** incorporated by reference to (1) patents or applications published by foreign countries or a regional patent office, **(2) non-patent publications**, (3) a U.S. patent or application which itself incorporates "essential material" by reference, or (4) a foreign application.

***35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The rejection of claims 1-4 and 6 under 35 U.S.C. 102(b) as being anticipated by Krieg et al. (WO 01/22972) is maintained for reasons of record.

**Applicant argues:**

1. Krieg speaks of the immune stimulatory effects of bacterial DNA.

2. SEQ ID NO:391 is not an oligoribonucleotide but rather an oligodeoxyribonucleotide. Hence Krieg et al. only disclose oligodeoxyribonucleotides which are structurally and materially different from the claimed oligoribonucleotides due to the presence of uracil instead of thymine and the presence of a 2' OH group.

3. High doses of ODNs were found to be toxic and increase an animal's sensitivity to endotoxin.

4. Krieg did not discover the lower toxic effects of ODNs.

5. Krieg et al. is not enabling in the context of ORNs.

6. CpG motifs do not constitute "signature sequences" as defined in the specification.

Applicant's arguments have been fully considered and deemed non-persuasive.

Krieg et al. disclose immunostimulatory nucleic acids (see abstract). Krieg et al. further disclose that said nucleic acids include molecules comprising a sugar (either ribose or deoxyribose) and refer to oligoribonucleotides (i.e. ORNs) as well as oligodeoxyribonucleotides (i.e. ODNs)[see page 34, lines 8-13). Moreover, Krieg et al. disclose that said nucleic acids may be resistant to *in vivo* degradation (see page 35, lines 24-26). Finally, as it is unclear what is engendered by the term "signature sequence" (see rejection above), said term is being interpreted as any readily identifiable sequence motif. For the reasons set forth above, the rejection is deemed proper and is maintained. It should be noted that with regard to Points 3 and 4, toxicity is an inherent property of a given nucleic acid. Since the compositions of the cited art are deemed to be the same as that of the instant invention, their toxicities would be the same.

As outlined previously, Krieg et al. disclose immunostimulatory nucleic acids (see abstract). Moreover, Krieg et al. disclose that said nucleic acids have the same stimulatory effects as bacterial proteins (see page 1, lines 13-15). Finally, Krieg et al. disclose an oligoribonucleotide with an identical sequence to SEQ ID NO:3 (for example) [see SEQ ID NO:391]. Although Krieg et al. disclose the same product they do not disclose the claimed method of making (i.e. that the oligoribonucleotides are bacterial in origin). However, it should be noted that the instant claims constitute Product-by-Process type claims. In Product-by-Process type claims, the process of producing the product is given no patentable weight since it does not

impart novelty to a product when the product is taught by the prior art. See *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi*, 218 USPQ 289, 292-293 (CAFC 1983) and *In re Brown*, 173 USPQ 685 (CCPA 1972). Consequently, even if a particular process used to prepare a product is novel and unobvious over the prior art, the product *per se*, even when limited to the particular process, is unpatentable over the same product taught in by the prior art. See *In re King*, 107 F.2d 618, 620, 43 USPQ 400, 402 (CCPA 1939); *In re Merz*, 97 F.2d 599, 601, 38 USPQ 143-145 (CCPA 1938); *In re Bergy*, 563 F.2d 1031, 1035, 195 USPQ 344, 348 (CCPA 1977) *vacated* 438 US 902 (1978); and *United States v. Ciba-Geigy Corp.*, 508 F. Supp. 1157, 1171, 211 USPQ 529, 543 (DNJ 1979). Finally, since the Patent Office does not have the facilities for examining and comparing Applicant's composition with the compositions of the prior art reference, the burden is upon Applicant to show a distinction between the material, structural and functional characteristics of the claimed composition and the composition of the prior art. See *In re Best*, It should be noted that the CpG motif disclosed by Krieg et al. is deemed to the "signature sequence" recited in claim 6.

The rejection of claims 1-4 and 6 under 35 U.S.C. 102(b) as being anticipated by Krieg et al. (U.S. Patent 6,239,116) is maintained for reasons of record.

**Applicant argues:**

1. Krieg speaks of the immune stimulatory effects of bacterial DNA.

2. SEQ ID NO:60 is not an oligoribonucleotide but rather an oligodeoxyribonucleotide. Hence Krieg et al. only disclose oligodeoxyribonucleotides which are structurally and materially

different from the claimed oligoribonucleotides due to the presence of uracil instead of thymine and the presence of a 2' OH group.

3. High doses of ODNs were found to be toxic and increase an animal's sensitivity to endotoxin.

4. Krieg did not discover the lower toxic effects of ODNs.

5. Krieg et al. is not enabling in the context of ORNs.

6. CpG motifs do not constitute "signature sequences" as defined in the specification.

Applicant's arguments have been fully considered and deemed non-persuasive.

Krieg et al. disclose immunostimulatory nucleic acids (see abstract). Krieg et al. further disclose that said nucleic acids include molecules comprising a sugar (either ribose or deoxyribose) and refer to oligoribonucleotides (i.e. ORNs) as well as oligodeoxyribonucleotides (i.e. ODNs)[0see column 14, lines 24-31). Moreover, Krieg et al. disclose that said nucleic acids may be resistant to *in vivo* degradation (column 14, lines 57-59). Finally, as it is unclear what is engendered by the term "signature sequence" (see rejection above), said term is being interpreted as any readily identifiable sequence motif. For the reasons set forth above, the rejection is deemed proper and is maintained. It should be noted that with regard to Points 3 and 4, toxicity is an inherent property of a given nucleic acid. Since the compositions of the cited art are deemed to be the same as that of the instant invention, their toxicities would be the same.

As outlined previously, Krieg et al. disclose immunostimulatory nucleic acids (see column 6, lines 1-9). Moreover, Krieg et al. disclose an oligoribonucleotide with an identical sequence to SEQ ID NO:1 (for example) [see SEQ ID NO:60]. Although Krieg et al. disclose the same product they do not disclose the claimed method of making (i.e. that the oligoribonucleotides are bacterial in origin). However, it should be noted that the instant claims

constitute Product-by-Process type claims. In Product-by-Process type claims, the process of producing the product is given no patentable weight since it does not impart novelty to a product when the product is taught by the prior art. See *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi*, 218 USPQ 289, 292-293 (CAFC 1983) and *In re Brown*, 173 USPQ 685 (CCPA 1972). Consequently, even if a particular process used to prepare a product is novel and unobvious over the prior art, the product *per se*, even when limited to the particular process, is unpatentable over the same product taught in by the prior art. See *In re King*, 107 F.2d 618, 620, 43 USPQ 400, 402 (CCPA 1939); *In re Merz*, 97 F.2d 599, 601, 38 USPQ 143-145 (CCPA 1938); *In re Bergy*, 563 F.2d 1031, 1035, 195 USPQ 344, 348 (CCPA 1977) *vacated* 438 US 902 (1978); and *United States v. Ciba-Geigy Corp.*, 508 F. Supp. 1157, 1171, 211 USPQ 529, 543 (DNJ 1979). Finally, since the Patent Office does not have the facilities for examining and comparing Applicant's composition with the compositions of the prior art reference, the burden is upon Applicant to show a distinction between the material, structural and functional characteristics of the claimed composition and the composition of the prior art. See *In re Best*. It should be noted that the CpG motif disclosed by Krieg et al. is deemed to the "signature sequence" recited in claim 6.

The rejection of claims 1-4 and 6 under 35 U.S.C. 102(b) as being anticipated by Schwartz et al. (WO 98/37919) is maintained for reasons of record.

**Applicant argues:**

1. Schwartz et al. contains no mention of ORNs and specifically lists sequences of ODNs in its disclosure.

2. Schwartz et al. only disclose oligodeoxyribonucleotides which are structurally and materially different from the claimed oligoribonucleotides due to the presence of uracil instead of thymine and the presence of a 2' OH group.

3. High doses of ODNs were found to be toxic and increase an animal's sensitivity to endotoxin.

4. Schwartz did not discover the lower toxic effects of ODNs.

5. Schwartz et al. is not enabling in the context of ORNs.

6. CpG motifs do not constitute "signature sequences" as defined in the specification.

Applicant's arguments have been fully considered and deemed non-persuasive.

Schwartz et al. disclose immunostimulatory nucleic acids (see abstract). Schwartz et al. further disclose that said nucleic acids can be oligoribonucleotides (i.e. ORNs) as well as oligodeoxyribonucleotides (i.e. ODNs)[see page 9, lines 8-9). Moreover, Schwartz et al. disclose that said nucleic acids may be stabilized to prolong their activity(see page 12, lines 24-25). Finally, as it is unclear what is engendered by the term "signature sequence" (see rejection above), said term is being interpreted as any readily identifiable sequence motif. For the reasons set forth above, the rejection is deemed proper and is maintained. It should be noted that with regard to Points 3 and 4, toxicity is an inherent property of a given nucleic acid. Since the compositions of the cited art are deemed to be the same as that of the instant invention, their toxicities would be the same.

As outlined prevouslySchwartz et al. disclose immunostimulatory nucleic acids (see abstract). Moreover, Schwartz et al. disclose an oligoribonucleotide with an identical sequence to SEQ ID NO:3 (for example). Although Schwartz et al. disclose the same product they do not disclose the claimed method of making (i.e. that the oligoribonucleotides are bacterial in origin).

However, it should be noted that the instant claims constitute Product-by-Process type claims. In Product-by-Process type claims, the process of producing the product is given no patentable weight since it does not impart novelty to a product when the product is taught by the prior art. See *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi*, 218 USPQ 289, 292-293 (CAFC 1983) and *In re Brown*, 173 USPQ 685 (CCPA 1972). Consequently, even if a particular process used to prepare a product is novel and unobvious over the prior art, the product *per se*, even when limited to the particular process, is unpatentable over the same product taught in by the prior art. See *In re King*, 107 F.2d 618, 620, 43 USPQ 400, 402 (CCPA 1939); *In re Merz*, 97 F.2d 599, 601, 38 USPQ 143-145 (CCPA 1938); *In re Bergy*, 563 F.2d 1031, 1035, 195 USPQ 344, 348 (CCPA 1977) *vacated* 438 US 902 (1978); and *United States v. Ciba-Geigy Corp.*, 508 F. Supp. 1157, 1171, 211 USPQ 529, 543 (DNJ 1979). Finally, since the Patent Office does not have the facilities for examining and comparing Applicant's composition with the compositions of the prior art reference, the burden is upon Applicant to show a distinction between the material, structural and functional characteristics of the claimed composition and the composition of the prior art. See *In re Best*, It should be noted that the CpG motif disclosed by Krieg et al. is deemed to the "signature sequence" recited in claim 6.

## ***Conclusion***

No claim is allowed.

Claim 5 is objected to as being dependent on a rejected claim. Said claim would be allowable if presented in independent form.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Zeman whose telephone number is (571) 272-0866. The examiner can normally be reached on Monday- Thursday, 7am -5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Albert Navarro can be reached on (571) 272-0861. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ROBERT A. ZEMAN
PRIMARY EXAMINER

September 16, 2006